



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,154	04/29/1999	EDWIN PETER DAWSON PEDNAULT	Y0999-214	6531

7590

04/23/2002

STEPHEN C KAUFMAN
INTELLECTUAL PROPERTY LAW DEPT
IBM CORPORATION
P O BOX 218
YORKTOWN HEIGHTS, NY 10598

EXAMINER

KAPADIA, MILAN S

ART UNIT

PAPER NUMBER

3626

DATE MAILED: 04/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/302,154

Applicant(s)

PEDNAULT, EDWIN PETER
DAWSON

Examiner

Milan S Kapadia

Art Unit

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/29/1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2166

DETAILED ACTION

Notice to Applicant

1. This communication is in response to the application filed 29 April 1999. Claims 1-4 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(A) Claim 2 recites the limitation "a test whose outcome is not equivalent to a comparison between, on the one hand, the number of training records of at least one species of training records belonging to the segment and, on the other hand, a numerical quantity that may depend on the combination of species of training records being considered but that is otherwise constant for all generated segments that are evaluated," in lines 27-37. This limitation is indefinite because it seems to point out what the invention in terms of what it is not, rather than pointing out the invention.

Claim Rejections - 35 USC § 103

Art Unit: 2166

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Apte et al (5,890,129) in view of Lash (2001/0020229).

(A) As per claim 1, Apte discloses a computer implemented system comprising program instructions executable by the machine (Apte; col. 3, lines 2-5; note the kernel is software which may be written in C++, therefore are program instructions executable by the machine) to perform method steps for constructing segmentation-based models that satisfy constraints on the statistical properties of the segments, the methods steps comprising:

(1) presenting a collection of training data records comprising examples of input values that are available to the model together with the corresponding desired output value(s) that the model is intended to predict; (Apte; col. 3, lines 20-33; the examiner interprets "data in data warehouse" as "input values that are available to the model" and "pure premium characteristics" as "desired output values that the model is intended to predict")

(2) generating on the basis of the training data a plurality of segment models, that together comprise an overall model, wherein each segment model is associated with a specific segment of the training data (Apte; col. 4, lines 17-27), the step of generating comprising performing optimization steps comprising:

- a) generating alternate training data segments and associated segment models; (Apte; col. 4, lines 33-40)
- b) evaluating at least one generated segment to determine whether it satisfies at least one statistical constraint (Apte; col. 4, lines 28-33; the examiner interprets " actual pure premium" as a "statistical constraint.") comprising a test whose outcome is not equivalent to a comparison between, on the one hand, the number of training records of at least one species of training records belonging to the segment and, on the other hand, a numerical quantity that may depend on the combination of species of training records being considered but that is otherwise constant for all generated segments that are evaluated (Due to the 112, 2nd paragraph issues noted above, the limitations directed to "a test whose outcome is not equivalent to a comparison between, on the one hand, the number of

training records of at least one species of training records belonging to the segment and, on the other hand, a numerical quantity that may depend on the combination of species of training records being considered but that is otherwise constant for all generated segments that are evaluated," are not given patentable weight since it appears to merely describe what the invention is NOT, rather than further limiting what the invention actually is) ; and

- c) selecting a final plurality of segment models and associated segments from among the alternates evaluated that have satisfactory evaluations (Apte; col. 4, lines 33-36; The examiner interprets "fine tuning the eligibility criteria for the product, until the segments that that are dragging the overall costs down are satisfactorily removed" as "selecting a final plurality of segments that have satisfactory evaluations.")

Apte fails to expressly disclose "a program storage device readable by a machine, tangibly embodying a program of instructions" in the preamble. However, this feature is old and well known in the art as evidenced by Lash's teachings with regards to a program storage unit, which may incorporate one or more conventional storage devices adapted to read programming data representing a computer program stored on a

Art Unit: 2166

storage medium (Lash; col. 3, paragraph 0033). It would have been obvious to one having ordinary skill in the art at the time the invention was made to expand Apte's computer-implemented method of underwriting profitability analysis to include a program storage unit, which may incorporate one or more conventional storage devices adapted to read programming data, as taught by Lash, with the motivation of providing means for storage and retrieval of program data and instruction to be used at a later time.

(B) As per claim 2, Apte discloses a computer implemented system comprising program instructions executable by the machine (Apte; col. 3, lines 2-5; note the kernel is software which may be written in C++, therefore are program instructions executable by the machine) to perform method steps for constructing segmentation-based models that satisfy constraints on the statistical properties of the segments, the methods steps comprising:

- (1) presenting a collection of training data records comprising examples of input values that are available to the model together with the corresponding desired output value(s) that the model is intended to predict (Apte; col. 3, lines 20-33; the examiner interprets "data in data warehouse" as "input values that are available to the model" and "pure premium characteristics" as "desired output values that the model is intended to predict");

(2) generating on the basis of the training data a plurality of segment models, that together comprise an overall model, wherein each segment model is associated with a specific segment of the training data (Apte; col. 4, lines 17-27), the step of generating comprising performing optimization steps comprising:

- a) generating alternate training data segments and associated segment models using statistical constraints to guide the construction of the data segments in a closed-loop fashion so as to ensure that the resulting data segments satisfy the statistical constraints; (Apte; col. 4, lines 28-39; The examiner interprets "actual pure premiums" as a "statistical constraint." The examiner also interprets the generating as being done in "a closed loop fashion," because the statistical constraint, "actual pure premium," is part of the eligibility criteria which is evaluated and then used to regulate the construction of potential segments (Apte; col. 4, lines 8-16)
- b) selecting a final plurality of segment models and associated segments from among the alternates generated (Apte; col. 4, lines 33-36; The examiner interprets "fine tuning the eligibility criteria for the product, until the segments that that are dragging the overall costs

down are satisfactorily removed” as “selecting a final plurality of segments from among the alternates generated.”)

(C) As per claim 3, Apte discloses a computer implemented system comprising program instructions executable by the machine (Apte; col. 3, lines 2-5; note the kernel is software which may be written in C++, therefore are program instructions executable by the machine) to perform method steps for constructing segmentation-based models that satisfy constraints on the statistical properties of the segments, the methods steps comprising:

(1) presenting a collection of training data records comprising examples of input values that are available to the model together with the corresponding desired output value(s) that the model is intended to predict; (Apte; col. 3, lines 20-33; the examiner interprets “data in data warehouse” as “input values that are available to the model” and “pure premium characteristics” as “desired output values that the model is intended to predict”)

(2) generating on the basis of the training data a plurality of segment models, that together comprise an overall model, wherein each segment model is associated with a specific segment of the

training data (Apte; col. 4, lines 17-27), the step of generating comprising performing optimization steps comprising:

- a) generating alternate training data segments and associated segment models; (Apte; col. 4, lines 33-40)
- b) adjusting the alternate pluralities so that the resulting data segments satisfy the statistical constraints (Apte; col. 4, lines 28-39; The examiner interprets "actual pure premiums" as a "statistical constraint" and "fine tuning" as a form of "adjusting")

(D) As per claim 4, Apte discloses a computer implemented system comprising program instructions executable by the machine (Apte; col. 3, lines 2-5; note the kernel is software which may be written in C++, therefore are program instructions executable by the machine) to perform method steps for constructing segmentation-based models of insurance risks, the methods steps comprising:

- (1) presenting a collection of training data comprising examples of historical policy and claims data; (Apte; col. 3, lines 6-19)
- (2) generating on the basis of the training data a plurality of segment models, that together comprise an overall model, wherein each segment model is associated with a specific segment of the

training data (Apte; col. 4, lines 17-27), the step of generating comprising performing optimization steps comprising:

- a) generating alternate training data segments and associated segment models; (Apte; col. 4, lines 33-40)
- b) evaluating the generated segment models using numerical criteria derived from statistical models used by actuaries to model insurance risks, (Apte; col. 4, lines 28-33; The examiner interprets "actual pure premiums" as a "numerical criteria derived from statistical models used by actuaries to model insurance risk")
- c) selecting a final plurality of segment models and associated segments from among the alternates generated so as to optimize aggregate numerical criteria for the plurality (Apte; col. 4, lines 33-36; The examiner interprets "fine tuning the eligibility criteria for the product, until the segments that that are dragging the overall costs down are satisfactorily removed" as "selecting a final plurality of segment form among the alternates generated as to optimize aggregate numerical criteria for the plurality.")

Conclusion

Art Unit: 2166

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited but not applied art teaches a method for generating predictive models in a computer system (5,692,107); a method and apparatus for evaluating a potentially insurable risk (4,975,840); and a system for funding future worker's compensation losses (5,712,984).


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Milan S Kapadia whose telephone number is 703-305-3887. The examiner can normally be reached on Monday through Friday, 8:30 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 703-305-9588. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7238 for regular communications and 703-746-7239 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

mk

April 18, 2002


JOSEPH THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100